

### **REMARKS**

In response to a non-final office action dated February 17, 2006, the Applicant appreciates the Examiner's allowance of claims 10 and 11 and respectfully requests reconsideration of the remaining claims of the application. The following is a brief discussion of the rejections made by the Examiner as well as the Applicant's response.

#### **Rejections based on 35 U.S.C. § 103**

The Examiner rejected claims 1-9 under 35 U.S.C. § 103(a) as being unpatentable over Donlan (5,361,578) in view of Cheng (6,418,724) and optionally either Cole (4,268,017) or Richardson (2,306,141). The Examiner also rejected claims 1-9 under 35 U.S.C. § 103(a) as being unpatentable over Donlan (5,361,578) in view of Fetescu et al (5,727,377) and optionally either Cole (4,268,017) or Richardson (2,306,141).

#### **Comments**

In response to the office action, the Applicant has amended the specification and the claims to further clarify the present invention.

##### **A. Applicable Authority**

The requirements of a *prima facie* case of obviousness are summarized in MPEP § 2143 through § 2143.03. In order "[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success [in combining the references]. Finally, the prior art reference (or references when

combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)". See MPEP § 2143. Further, in establishing a *prima face* case of obviousness, the initial burden is placed on the Examiner. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 USPQ 972, 972, (Bd. Pat App. & Inter. 1985)." *Id.* See also MPEP § 706.02(j) and § 2142.

B. Rejections based on Donlan in view of Cheng and optionally either Cole or Richardson

With respect to the rejection of claims 1-9 under 35 U.S.C. § 103(a) to Donlan in view of Cheng and optionally either Cole or Richardson, the Applicant respectfully disagrees with the Examiner that the Applicant's invention is obvious in view of the prior art. While Donlan teaches certain features of the fuel nozzle assembly, Donlan combined with Cheng and either Cole or Richardson does not render the Applicant's invention obvious.

Cheng teaches a meter 105 that measures flow rate and is coupled to a computer control so as to provide feedback for setting the valve 101 position (see Col. 7, lines 19-21 of Cheng). It is actually valve 101 that sets the amount of steam passing therethrough, and this valve is adjustable depending on the feedback from meter 105 and desired operating conditions. In the Applicant's invention, the means to regulate a steam supply at the steam inlet is a meterplate 17 that is fixed at the inlet location and contains at least one metering hole of a constant diameter. A meterplate by design is a plate that is not movable nor adjustable in

operation, but is predetermined and fixed in size and location so as to provide a known opening for determining a flow rate therethrough. Alternatively, a valve is a device that can move during operation for limiting or changing the flow therethrough. A meterplate, although restricting the amount of flow across the plate, never stops the flow across it. Therefore, Cheng actually teaches away from a limitation of the Applicant's invention.

With reference to the Examiner's comments regarding FIG. 13 of Cheng, although a two inch orifice is shown, no other information is provided in FIG. 13 that would indicate that this location is a metering device such as the meterplate of the Applicant's invention. Furthermore, no discussion is found in the specification that would support the 2" orifice shown in FIG. 13 as being a flow restriction device in the steam circuit. Finally, the two inch orifice shown is not contained within the fuel nozzle assembly, as defined by the Applicant's invention.

Cole teaches an orifice 20 for connecting a steam line to a space 13 in the event steam purge is deemed necessary. A steam source is not connected to the feed nozzle assembly 6 unless necessary. Orifice 20 is taught as an opening for accepting a steam flow (see Col. 3, lines 13-15 of Cole), not as a point of flow restriction for improving combustion dynamics and controlling steam flow pressure drop and velocity. The fuel nozzle assembly of the Applicant's invention does not utilize an "as necessary" steam flow connection for purging as disclosed by Cole. No further description is provided by Cole regarding the functionality of orifice 20. Therefore, it cannot be determined from the specification that any flow restrictions are possible at this location.

Richardson discloses a non-return valve 27 that is arranged in a steam flow path to prevent the return flow of liquid fuel through the steam passage. This configuration is disclosed only with the intent of preventing liquid fuel from mixing with the steam in a backflow

condition. Richardson does not provide any other teaching regarding regulating the flow of steam, especially one directed towards improving combustion dynamics and controlling steam flow pressure drop and velocity, as disclosed by the Applicant's invention.

As a result, none of the references cited individually teach all of the limitations of the Applicant's invention. Furthermore, neither Cheng, Cole, nor Richardson provide the necessary suggestion or motivation to be combined with Donlan either individually or together to generate the Applicant's invention. Finally, there is no reasonable expectation of success discussed in any of the prior art references should any of these references be combined with the technology disclosed by Donlan.

C. Rejections based on Donlan in view of Fetescu et al and optionally either Cole or Richardson

With respect to Donlan, Cole, and Richardson, the arguments previously discussed are also applicable to this rejection, and will therefore not be repeated.

Fetescu et al discloses a steam line 23 having a throttle valve 22 and measuring orifice 21. Measuring orifice 21 is coupled to and controls regulating valve 20. When throttle valve 22 is closed, the quantity of steam is regulated via regulating valve 20. Regulating valve 20 opens or closes as necessary to maintain a desired steam temperature. It appears from the specification and figures that the steam quantity is physically restricted by valves 20 and 22, not by orifice 21. Furthermore, Fetescu teaches away from the Applicant's invention, similar to Cheng, Cole, and Richardson, in that Fetescu utilizes valves 20 or 22 that can open and close for controlling the steam flow. The Applicant's invention, as previously discussed, utilizes a fixed meterplate having at least one opening of a constant diameter so as to produce a generally constant known flow of steam to a fuel nozzle, assuming steady upstream conditions. The Applicant's invention cannot have a varying steam flow as in Fetescu et al.

As a result, none of the references cited individually teach all of the limitations of the Applicant's invention. Furthermore, neither Fetescu et al, Cole, nor Richardson provide the necessary suggestion or motivation to be combined with Donlan either individually or together to generate the Applicant's invention. Finally, there is no reasonable expectation of success discussed in any of the prior art references should any of these references be combined with Donlan.

The Applicant appreciates the Examiner's allowance of claims 10 and 11. As such, no amendments have been made to these claims. The remaining claims 1-9 have been amended where necessary in order to further clarify the present invention and distinguish the present invention from the prior art cited by the Examiner. Claim 8 has been incorporated into claim 1. It is the Applicant's belief that the standing rejections have been overcome. The specification has been amended in order to further clarify the present invention and to correct inconsistencies between the specification and the claims. The Applicant respectfully requests reconsideration of the application, as amended, and allowance of claims 1-7 and 9.

If any issues remain that would prevent issuance of this application, the Examiner is urged to contact the undersigned by telephone prior to issuing a subsequent action.

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Respectfully submitted,



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